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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/476,093	01/03/2000	DAVID F. SORRELLS	1744.0260001	7306

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EXAMINER

CHOW, CHARLES CHIANG

ART UNIT	PAPER NUMBER
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2685

DATE MAILED: 08/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/476,093

Applicant(s)

SORRELLS ET AL.

Examiner

Charles Chow

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 March 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-13 and 15-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7-9 and 12 is/are allowed.
- 6) ☒ Claim(s) 1,3-6,13,15,18-23,25 and 26 is/are rejected.
- 7) ☒ Claim(s) 16-17, 24 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. <u>18</u> . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12, 16-17</u> . | 6) <input type="checkbox"/> Other: _____. |

Detailed Action

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The current title does not describe the universal translation for family radio.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3-5, 13, 15, 18-19, 20-22, 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hongu et al. (US 4,132,952) in view of Lam et al. (US 5,937,013).

Regarding **claim 1**, Hongu et al. (Hongu) teaches a method for communicating comprising the steps of (1) identifying a radio frequency band from the electromagnetic EM spectrum as a band of interest (multi-band, multi-channel, tuner, for selecting proper filter for frequency band containing a desired channel. col. 1, lines 9-18, abstract, Fig. 1-7); (2) identifying a channel with said band of interest as a channel band combination and (3) filtering said EM spectrum thereby passing said channel/band combination (identifying desired channel by setting local oscillator frequency, to allow desired channel to pass through to the mixer, col. 3, lines 40-54); (5) filtering said down converted signal thereby passing said channel as a filtered down converted signal (the mixer 15 providing the down converted signal which are then filtered by filter 17L, 17 H, Fig. 2, col. 3, lines 27-39). Hongu fails to teach the aliasing

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said channel/band combination according to an aliasing signal. However, Lam et al. (Lam) teaches the aliasing said channel/band combination according to an aliasing signal having aliasing frequency (the sampling frequency which is lower than carrier frequency in col. 4, lines 39-50; col. 4, lines 1-14; abstract, Fig. 3, Fig. 1); the aliasing frequency being a function of a clock signal thereby generating a down converted signal (the aliasing sampling frequency is a function of carrier clock frequency divided by $4N+2M+1$, col. 4, lines 39-50; col. 9, line 21 to col. 10, line 25). Lam teaches the efficient under sampling down conversion without using high power, high bandwidth for many low power design (col. 3, lines 51-67), Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Hongu with Lam's under sampling down conversion, such that the receiver could be operated with efficiency by reducing the high power, high bandwidth operation for down conversion, by utilizing the sampling frequency which is lower than the carrier frequency.

Regarding **claims 3, 18, 26**, Hongu taught the intermediate frequency (i.f. in col. 3, lines 37-39), signal from down conversion.

Regarding **claims 4, 19, 25**, Lam taught the down converted base band signal is a base band signal (col. 9, lines 4-8).

Regarding **claims 5, 15**, the clock signal has a clock frequency the method comprising the step of adjusting the clock frequency for channel /band combination so that said aliasing frequency is suitable for down converting said channel/band combination (the adjustment of the phase offset for different channel by utilizing M, N, col. 9, line 66 to col. 10, line 15).

Regarding **claim 13**, Hongu teaches a method for communicating comprising the steps of (1) identifying a radio frequency band from the electromagnetic EM spectrum as a band of interest (multi-band, multi-channel, tuner, for selecting proper filter for frequency band containing a desired channel. col. 1, lines 9-18, abstract, Fig. 1-7); (2) identifying a channel with said band of interest as a channel band combination and (3) identifying one of said channel/band combination as monitored, desired, channel/band combination and (4) causing an input filter to operate with monitored channel/band combination and filtering an input signal, using input filter (12L, 12H), to create a filtered signal having a frequency within said monitored channel/band combination (the channel/band combination 90-108 MHz, 170-220 MHz in col. 2, lines 50-68; the identifying desired channel by setting local oscillator frequency, to allow desired channel to pass through to the mixer, col. 3, lines 40-54); (6) filtering said down converted signal thereby passing said channel as a filtered down converted signal (the mixer 15 providing the down converted signal which are then filtered by filter 17L, 17 H, Fig. 2, col. 3, lines 27-39). Hongu fails to teach the aliasing said filtered signal according to an aliasing signal. However, Lam et al. (Lam) teaches the aliasing said filtered signal according to an aliasing signal having aliasing frequency (the sampling frequency which is lower than carrier frequency in col. 4, lines 39-50; col. 4, lines 1-14; abstract, Fig. 3, Fig. 1); the aliasing frequency being a function of a clock signal thereby generating a down converted signal (the aliasing sampling frequency is a function of carrier clock frequency divided by $4N+2M+1$, col. 4, lines 39-50; col. 9, line 21 to col. 10, line 25). Lam teaches the efficient under sampling down conversion without using high power, high bandwidth for many low power design (col. 3, lines 51-67), Therefore, it would have been

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obvious to one of ordinary skill in the art at the time of invention to modify Hongu with Lam's under sampling down conversion, such that the receiver could be operated with efficiency by reducing the high power, high bandwidth operation for down conversion, by utilizing the sampling frequency which is lower than the carrier frequency.

Regarding **claim 20**, Hongu teaches the a system for communicating comprising an input filter module (BPF 12L,12H) comprising of one or more filters (BFP12L, 12H) to filter one or more input signals (channels in the low, upper band, 90-108 MHz, 170-220 MHz) so as to generate one or more filtered input signal; an output filter module (BPF 17L, 17H) comprising one or more output filters to filter said down converted signal (output signal from mixer 15). Hongu fails to teach a universal frequency translator to down convert at least one of said one or more filtered input signal (selected output from at L, H, via switch Sa, Fig. 2), to generate a down converted signal, said universal frequency translator comprising means for aliasing said filtered input signal to an aliasing signal having aliasing frequency, said aliasing frequency being a function of a clock signal thereby generating said down converted signal (the sampling frequency which is lower than carrier frequency in col. 4, lines 39-50; col. 4, lines 1-14; abstract, Fig. 3, Fig. 1; the aliasing sampling frequency is a function of carrier clock frequency divided by $4N+2M+1$, col. 4, lines 39-50; col. 9, line 21 to col. 10, line 25). Lam teaches the efficient under sampling down conversion without using high power, high bandwidth for many low power design (col. 3, lines 51-67), Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Hongu with Lam's under sampling down conversion, such that the receiver could be operated with

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efficiency by reducing the high power, high bandwidth operation for down conversion, by utilizing the sampling frequency which is lower than the carrier frequency.

Regarding **claim 21**, Lam taught the control signal generator (blocks 380, 330, 340, 350, 360, 370, for controlling the down conversion, Fig. 3) for the frequency translating operated according to the control signal generated by circuit blocks 380, 330, 340, 350, 360, 370.

Regarding **claim 22**, Hongu taught the control signal generator is a voltage controlled oscillator (local oscillator 16 for different channels, col. 3, lines 34-39).

3. Claims 6, 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hongu et al. (US 4,132,952) in view of Lam, as applied to 6 above, and further in view of Smith et al. (US 5,790,587).

Regarding **claim 6**, Hongu and Lam fails to teach the decoding. However, Smith et al. (Smith) teach the IF/demodulation 730 acting as a spectrum decoder (col. 18, lines 51-58) for the decoding said filtered down converted to create a decoded down converted signal. Smith teaches a communication system having selectable frequency bands and selectable modes for user interest (Fig. 9-13, Fig. 14/Fig. 15; col. 1, lines 22-25; col. 2, line 46 to col. 4, line 5; col. 4, lines 46-28; col. 18, lines 4-67; the monitoring of one or more single frequency in a frequency bands for a repeating demodulation process for each frequency/channel (abstract, col. 18, lines 29-50; col. 15, lines 55-67; col. 18, lines 46-67). Smith teaches the improved technique for operating under plurality of frequency bands with multiple modes, by utilizing single synthesizer 721 with input filter BPF 714, 715. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Hongu and Lam, with

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Smith's decoder, such that the receiver could be efficiently operating for multi-band with multiple modes, by utilizing single synthesizer 721 with input filter BPF 714, 715.

Regarding **claim 23**, Smith teaches the decoder module comprising one decoder for decoding down converted signal to generate decoded output signal, as shown in claim 6 above.

Allowable Subject Matter

4. The following is an examiner's statement of reasons for allowance:

Claims 7-9, 12 are allowable over the prior art of record, the prior art fails to teach singly, particularly, or in combination, the subject matter, with priority date of 1/22/1999, for a controller to generate a control signal according to first command; and a unified down converting and filtering UDF module to filter and down convert one or more input signals based on control signal and according to second command (claim 7). The dependent claims are also allowable due to their dependency upon the independent claims.

The closest patent to Lam et al. (US 5,937,013) teaches the under sampling down conversion utilizing aliasing signal, under sampling, sampling received signal for down conversion by utilizing frequency rate lower than the carrier frequency, as shown in claim 1 above. Lam fails to teach the controller to generate a control signal according to first command; and a unified down converting and filtering UDF module to filter and down convert one or more input signals based on control signal and according to second command.

Hongu-'952 teaches the multi-band user desired channel down conversion having input filters BPF 12L/12H, switch Sa, mixer 15, BPF filters 17L/17H, switch Sb (Fig. 2). Hongu fails to teach the controller to generate a control signal according to first command; and a unified

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down converting and filtering UDF module to filter and down convert one or more input signals based on control signal and according to second command.

Claims Objection

5. Claims 16-17, 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The cited prior arts fail to teach the selecting decoder being configured to operate with monitored channel/band combination and using selected decoder to create a down converted signal (claim 16); comprising the steps repeating steps 3 through 6 in (claim 17); the controller to issue at least a first command through fifth command, the input filter, the universal frequency translator, the universal frequency translator; the control signal generator, the output filter module, the decoder module (claim 24).

Response to Arguments

6. Applicant's arguments with respect to claims 1-6, 13-15, 18-23, 25-26 have been considered but are moot in view of the new ground(s) of rejection.

Regarding applicant's amended all independent claims by referring to the co-pending applications, 09/476,091, 09/476,092, 09/476,330, 09/172,220, for the no teachings for the aliasing channel/band combination according to an aliasing signal, having an aliasing frequency which is a function of a clock signal, thereby, generating a down converted signal including channel/band combination, the ground of rejection has been changed by utilizing Hongu et al. (US 4,132,952) and Lam et al. (US 5,937,013).

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A telephone interview was conducted on 7/20/2004, from examiner to attorney Michael Lee, for the status for claims 10, 11. It is confirmed with attorney, through secretary, Louan, that claims 10, 11, are cancelled as shown in the preliminary amendment 9/5/2001.

Regarding the corrected figures are not received from attorney, for including draftsperson's correction, it is confirmed with attorney's secretary, that the figures shall be mailed out in the response to this office action.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles Chow whose telephone number is (703)-306-5615.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor,

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Edward Urban, can be reached at (703)-305-4385.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

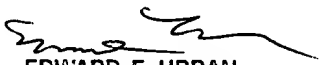
or faxed to: (703) 872-9306 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,
Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or
proceeding should be directed to the Technology Center 2600 Customer Service Office
whose telephone number is (703) 306-0377.

Charles Chow C.C.

July 20, 2004.


EDWARD F. URBAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600